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ABSTRACT

Focusing primarily on the education of high school students, the project described in this paper combines traditional ecology studies with studies in communication and the verbal arts in order to build an awareness of community problems and provide a means by which students can transmit their learning to the community. The first section of the paper discusses methods and forms for integrating classes in ecology with those in basic communications, debate, oral interpretation and readers theatre, literature, or mass communication. The second section gives specific exercises for group interaction that include interpersonal approaches, games, role playing, audience debate techniques, and other exercises that may lead into the creation of scripts. The section also provides suggestions for devising similar exercises. The third section discusses the creation of scripts for readers theatre and contains some sample scripts that have evolved from the project. (FL)

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PROJECT ECO-DRAMA - A MODEL

Created under the auspices
of a grant from the Office
of Environmental Education

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Marion Kleinau

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Carried out at Mt. Vernon, Illinois
by Southern Illinois University personnel

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SECTION I

Introduction

A major problem of the environmentalist is to enable man to take responsibility for the world in which he lives. This notion of ecology, as the study of the balance of all the factors and forces in the environment, inevitably rules out the inherently limited role of technology as the only solution to current crises. What is needed in addition to technological advances is a revolution in thought and attitude.

Project Eco-drama, as a "face to face" (person to person) community educational program, operates on the assumption that the more subtle problems underlying the ecological crises are not adequately met until a higher level of sensitivity to the environment is achieved. It is obvious that residents of a small town cannot hope to control all of the man-oriented threats to their environment. However, there are action steps these residents can take at home to render both immediate and long-term improvement in their living space. For example, decisions in local government related to sewage disposal, industrial zoning, the care of public lands, and standards for home construction are a few of the kinds of activities which produce immediate and visible results.

Project Eco-drama is based on the assumptions that communities need to be stimulated (1) to understand the concept of ecological balance, (2) to face local problems squarely through analysis and discussion, and (3) to include, in the education of their young, experiences through which they will develop an awareness of their responsibility to their life world.

Project Eco-drama's primary focus is upon the education of the young at the high school level. The name, eco-drama, refers to an

integrated approach to a study of the environment which seeks a blending of affective and cognitive aspects of the educational process in an active learning experience. It is designed to build an active and practical awareness of community problems and provide a means by which students can transmit the results of their learning experiences to the community. Through performances and other community activities, it offers a means by which students can interact with the community, and thereby multiply the effectiveness of their work.

The specific project under consideration combined more traditional ecology studies with studies in communication and the verbal arts of writing and oral interpretation. Pioneered at the level of secondary education, the approach suggests some methods whereby classes in ecology might interact with classes in basic communications, debate, oral interpretation and readers theatre, literature, or mass communications, in different kinds of organized structures.

Underlying such an approach is the premise that facts alone will not save the environment. It is only when facts affect the attitudinal set of the individual that he is willing to act. Conversely, an educational approach which activates information in terms of feelings and communicative functions has a distinct advantage in the probability of some effect upon attitudes.

Further, the approach is based upon the concept of interrelatedness, both in the universe and in the learning process. So often the educational system seems to compartmentalize concepts and activities. Eco-drama seeks to break down such compartments and see both that communication pervades all of man's activities and that environmental issues affect every aspect of man's life. It proposes to aid the student in increased

awareness of "how things fit together" and of the fact that all aspects of life are related, not separate.

Dramatic activities are the hub of the Eco-drama approach, in the form of interpersonal exercises, role playing, improvisation, debate (the drama of confrontation), discussion (the drama of group interaction), public speaking (the drama of persuasion) and the creation (construction and performance) of scripts for readers theatre and commercials for the media (which may combine any or all of the above activities). The activity involves strong interaction among the students (sometimes verbal, sometimes physical), the analysis of factual material, the discovery and use of imaginative materials, and the writing of original materials. This approach is not intended to replace the usual activities carried on in ecology classes. It is, rather, intended to add a communicative dimension to these activities.

Project Eco-drama as pioneered in Mt. Vernon, Illinois, was a success in that it was unique; it did inspire creative activity, and it did have impact upon attitudes. There were tangible results, some of which are included (in revised form) in this collection. Nevertheless, major emphasis in the project was placed upon the learning process rather than upon product. The model represents a distillation, based upon a year's trial, of some of the procedures, problems and advantages of the approach. Structures and techniques were pioneered in Project Eco-drama and revised in accordance with experience gained through the project. They are here offered as a tentative guide for others who may wish to follow similar paths toward a synthesis between environmental awareness and the communication process. Hopefully it will provide both a model to be followed and a stimulus for the reader to generate

new learning environments and activities for his/her own classroom. Following are suggested structures and activities which evolved from the project. Section I discusses methods and forms for class integration. Section II gives specific exercises for group interaction which include interpersonal approaches, games, role playing, audience debate techniques, and other exercises which may lead into the creation of scripts. Also included are suggestions for devising similar exercises. Section III is devoted to discussion of the creation of scripts for readers theatre and some sample scripts which evolved from the project.

Section I

A. Class Combinations

Although a number of different classes may be combined in various ways, it may be advisable to begin with only two, for example a class in ecology and a class in oral interpretation and readers theatre. The nature of the courses combined will strongly affect the ways in which the interaction takes place.

1. Ecology and basic communications:
   Activities most germaine to this kind of combination are (a) get acquainted, interpersonal exercises which include ecological formats, (b) discussion activities in which eco-students serve as "information experts" and communications students provide organization and facillitation of discussion, and (c) team speeches, in which one ecology student and one communications student work together to prepare and present a speech to inform and persuade (preferably with visuals). If the basic communications class also includes a section on "self" or "interpersonal communication", then the ecology and basic communication combination can also explore the concept of human ecology. Some of the products of these exercises may then be presented to local community organizations.

2. Ecology and debate:
This combination might make use of different kinds of debate formats (academic, audience, etc.) in which each team is composed of 50% of ecology students and 50% of debate students. All team members should be responsible for researching material, but the values to be obtained by the combination result in the ecology student being able to use his information in an argumentative situation, thus learning more about its validity against opposition, and in the debate student gaining greater access to expert information (it is assumed that the ecology teacher will be on hand) and being able to see immediate application of debate techniques to life-problems. It is also possible for the generation of "new facts" through experimentation. For example, a team might go to a local water source and prove, through analysis, that it is unfit to drink. A good follow-up project is a demonstration debate for a local organization.

3. Ecology and oral interpretation (including readers theatre)
The combination would seem to work best here in the creation of scripts for group performance. The creation of a compiled script requires that imaginative literature and factual information be brought together, sifted through, organized and structured around a basic idea, and put into script form. This process also requires some creative writing. The ecology students have an opportunity to expand the affective aspect of their basic study. The interpretation students have ready access to information which helps to place the affective impact of the script on a reasonably sound factual basis. The interpretation students also learn something about the facts of the environment. The process of creation of a script should be carried through to completion, i.e., beginning with selection of topic, moving through to the completed script and concluding with the performance of the script. This provides the full range of learning activities: the explorations of subject matters, the decision-making processes, the creative and integrative activities of a compiled script, the imaginative and motor skills of staging and performance and the development of communication skills before an audience. Scripts should be produced and the best ones taken out into the community.

4. Ecology and mass communications:
Ideal activities for this kind of combination are (a) the creation of "commercials" about the environment for radio or television, (b) the creation of "advertisements" for magazines concerning the environment and (c) the creation of "talk shows" of various kinds. If there is a local radio or television station, the students might be able to present their commercials as a public service spot, or perhaps the school has a closed circuit system over which they might be produced. If none of this is available, the teacher may simulate a "studio" in the classroom.

5. Multiple Combinations:
Sometimes it may be possible to combine one ecology class with two other classes which meet at the same time, for example, an ecology class, a basic communications class, and a debate class. Several kinds of interaction procedures might be used. The ecology class may be divided so that one half integrates with debate and one half with communications. All classes are then brought together for final presentations. Or, for more complete integration, teams may be set up from all three classes composed of approximately two or three students from each class. The teams would then decide upon an ecologically centered activity for the combined exercise (i.e., a debate, a discussion, a lecture-demonstration, etc.) to be presented to the combined three classes. Again, if possible, send some of these final presentations out into the community. The combining of more than two classes should be approached with great care because interaction problems become much more complex. This kind of combination, on the other hand, can also be very rewarding in that some very unusual and creative learning activities may be engendered.

In all cases, when bringing classes together, the teachers involved should spend considerable planning time beforehand, in setting up objectives and organizing subject matter and structure. The subject matter of the unit may be organized around a single ecological problem, such as certain aspects of air or water pollution. On the other hand, if the interaction occurs later in the semester, or with second level ecology classes (so that the eco-students have had considerable previous learning) a selection of subject matters may be set up so that each group or team may choose its own. Some subject matters which were used in Project Eco-drama are listed below:

I. Down the Drain (liquid waste disposal)
II. Into the Garbage Can (solid waste disposal)
III. Into the Air (air pollution)
IV. The Early American Dinsmith (noise pollution)
V. Energy. It Comes Out of This Little Hole in the Wall
VI. The Non-Remewable Consumables, or "If You're Done With It, Throw It Away."
VII. The Yard Guard

B. Interaction Structures

Several different structural combinations were pioneered by Project Eco-drama, and based upon that experience but not totally limited by it, some possible formats are outlined below. It is not to be assumed that these are definitive; they are suggestions only. A structure best emerges from an interaction between the specific

teacher involved, the class subject matters and the individual school system.

1. General Considerations

a. The Group Process

At the heart of the Eco-drama approach is the concept of the group process -- students working in teams, pooling energies and resources to accomplish common goals, be these goals a written script, an improvisation, or a debate. Group work has distinct advantages in the learning process. First the group method teaches cooperation and learning to work with others. Handled properly, it helps to break down barriers between people. If students can be encouraged to help each other, better students can aid weaker ones and more timid students may contribute within the group when they would not do so before the whole class. But the spirit of cooperation and not competition must prevail. Again, group work gives students opportunity to demonstrate their strengths and knowledges by allowing them at times to become "experts", creatively applying bits of data they have learned, or to be "performers", communicating the products of the group activity. Group activity also helps students to gain increased awareness of how things fit together by trying to fit themselves together in a common task.

In order to establish the spirit of cooperation vital to group functioning, it is necessary for the teacher to be aware of potential problems. For example, if the school is medium to large, the students from different classes may not be acquainted, and even those who have met may not be well acquainted. It is necessary to understand in the beginning that the basis for good group work is interpersonal understanding and that 1) such understanding takes time and 2) interpersonal conflicts are likely to occur in some form. In rural communities, for example, there may be a sharp division between "town" students and "farm" students. Then there is the inevitable "lazy" student who will let others do his work while the "others" resent his laziness. There will be the student who is alienated from the group due to his own nature, to his being "different" in some way from the others, or to some other factor. There will also be personality conflicts.

These problems, if anticipated, can be smoothed over by various means. The lack of acquaintance can be alleviated by a day or two of interpersonal get-acquainted exercises. These are well worth the time given to them. If handled seriously, the understandings which evolve from such sessions can help to minimize such cleavages as the one between town and country. A system of accountability for work done in groups will ease the student's mind about the

proportion of work done by each group member. Alienation and personality conflicts are more difficult problems with which to deal. This is why groups should be put together with great care. If the teacher is aware of his/her students through observation, such personality patterns soon become apparent. It would be unwise, in a unit of short duration, to place known conflicting personalities together in the same group. In the same way, an "alienated" student might be placed within a group of friendly, open students. The interpersonal aspect of group work is fully as important as the subject matter covered, and can facillitate or hinder effective work with the subject matter.

b. Classroom Space

Although the original classrooms will be available for use during the combined activity, additional space is usually necessary 1) for activities in which all class members meet together (usually one classroom will not be large enough and an auditorium may be desirable), and 2) when breaking the classes down into smaller groups or teams. In the latter case, it may be necessary to find additional "places" for teams meet such as unused classrooms, the lunchroom, the front steps, or wherever your school system will allow such activity to take place. In planning stages, groups can be separated into different parts of a single classroom, but in some phases of the creative process (for some kinds of projects), the single classroom might prove a hindrance in that an activity would interfere with other groups.

c. Planning

In preparation for any kind of interaction between classes, long range planning becomes imperative. Students need to know beforehand the kind of learning structure for which they are registering. Any attempt to integrate subject matters can be made much more difficult by running counter to student expectation. If the student thinks he is taking a class in readers theatre and then is asked to run out and observe a junk yard, he may become frustrated. In this case, careful explanations by the teacher may not completely counteract that frustration or placate the previous expectation. Therefore, class integration should be planned carefully with the person in charge of general curriculum and plans completed in time to be reflected in the registration schedule.

Carefully structured planning sessions, coupled with adequate preparation time will help to insure success for the project. Lack of adequate preparation will inevitably frustrate both teachers and students.

2. Articulation Structures

a. Unit Structure
Classes may be brought together for a short single unit only. This may last from one week to three or four, depending upon the nature of the experience. There may be one or several such units during the course of the semester. During the time of the combined unit the classes should either 1) meet always in combined groups, or 2) meet for short designated "business meetings" in original classrooms, but spend most of the time in combined groups. This kind of combination is, perhaps, more easily managable, but does not give a sense of total course integration.

b. Weekly Structure
Class interaction may be set up on a two or three days per week system. In this arrangement the students are working, simultaneously, on two lines of developments which set up a double interaction: the "combined days" each week fully integrate the two subject matters in terms of learning activities; the "non-combined-days" are devoted to the original class subject matters respectively, but the subject matter interrelationships should be highlighted. In other words, while the ecology class is meeting as an individual unit, the communicative values and possibilities of what they are learning should be stressed. Likewise, in the communications, readers theatre, or debate class, the relationships to human ecology, and the possibilities for adaptation of activities to ecological subjects should be emphasized. As a further example, if a communications class has a unit of job interviews, why not let the students interview for a job as an ecology teacher, as a conservation officer, or for a company which is directly related to the energy crisis? Or, more general interviewing techniques could be learned by setting up some role-playing exercises in which the students interview key figures in the community's ecological structure, such as a leading manufacturer, the city water commissioner, etc. With care, a few actual interviews might be arranged.

The weekly structure is more complex, demands more careful pre-planning, and requires that the teachers be very aware of both subject matter areas. It further requires at least weekly planning sessions between teachers and full knowledge of what happens in the "other" classroom. It has the advantage of a more complete integration of learning activities while at the same time maintaining a single subject matter structure and identification (if this is so desired).

c. Completely Integrated
A totally integrated structure is a complete team-teaching situation in which classes are combined for the entire

semester and all activities represent an integration of subject matters. This kind of structure requires complete interaction between or among teachers and students and takes considerable pre-planning, but it can be the most creative and rewarding kind of integration. Whereas in the previously-outlined structures there are problems in articulation involving a feeling of "split-activities" and some difficulty in helping the student to comprehend the interrelationship between the two separate classes, here the subject matters become one. Ecological experimentation and observation becomes an integral part of preparation for debate, or script creation, or for speaking; the communication activities become a natural goal for the ecologically oriented study.

d. More Peripheral Kinds of Interaction

If none of the more completely integrated structures are possible within a system, interactions may take place in other ways. An ecology class might be used as "consultants" for a communications class preparing speeches or debaters perparing a case. In such cases, the two classes might be brought together for only one or two days. This kind of interchange needs to happen well into the term when the ecology students have enough information to be of help to the other class. The interchange must also be planned sufficiently in advance so that the specific area of ecology under consideration will be the same for both classes. The communications students cannot expect the ecology students to know all phases of the subject. But such an interchange might be planned around an area such as water pollution or energy trade-offs.

As another kind of general activity which would require a minimum of actual class overlapping, several different classes might work together for an all-school "ecology week." Classes could work independently for the most part but would bring their efforts together during the "week". The interpretation class might perform literature which pertains to ecological subjects. Art classes might prepare posters, mass communications classes might prepare commercials and advertising layouts, ecology classes might prepare demonstrations, etc. Such an endeavor would be a rewarding all-school activity.

If teachers in a school system wish to incorporate an awareness of the environment as a learning goal, there are many ways to do so; more and different kinds of opportunities will present themselves as teachers interact toward this end.

3. Community Contact

Stressed throughout the section on subject matter combination was

the possibility of sending students out into the community to present performances, debates, discussions and demonstrations to local organizations or over local media sources. In this manner students may see tangible results from their study through which they may attempt to make some kind of impact upon their own community. Such an extension of classroom activities contributes to a greater sense of unity between "school", which often becomes a series of meaningless activities for some students, and "home", where the student becomes a part of the larger community. If the areas of ecological concern chosen for study are viewed in relationship to the home community, a greater understanding of the close interrelatedness of all aspects of living may be engendered in the student, so that he begins to comprehend some of the consequences of the most basic decisions he makes each day, i.e., whether to walk, drive or ride a bicycle, where he throws his soft drink can, or how much water he uses. As the student begins to understand these concepts, and as he works with other students in creating communicative forms, he becomes actively engaged with the concepts as a medium of communication. If then, there is an outlet for the communication, a receiver of the message who is intricately a part of the situation the communication is about, and who will listen, the student is given a greater sense of accomplishment and of completion. The task becomes meaningful.

Again, it is important to help the student to set a realistic level of expectation with regard to his immediate impact upon the community. Young people may become enthusiastic and want to revolutionize the world immediately. When this occurs it becomes imperative to deal with the students' ideas with respect and to take whatever time is necessary to help them understand all of the reasons why particular action may not be taken and to re-channel the enthusiasm toward an immediately attainable goal. Further, it is important to enable the student to view the new (and sometimes lesser) goal in terms of its long-range impact.

SECTION II

Environmental Exercises

The following 12 exercises are a selected sample of exercises generated during Project Eco-Drama. Exercises similar to these were used in the experimental Eco-classrooms; modifications, revisions, synthesis and re-evaluation of the exercises used at Mt. Vernon produced what follows.

Although the subject matter of the exercises is specific and requires the student to gather information and utilize it in conjunction with the individual activities, a major importance of these exercises lies not in information gathering and memory, but in the actual doing, the process of moving through the experience of the exercise. Basic to these exercises is the concept of activity and experience, the concept of drama.

This notion of drama which asks participation of the student through the use, not only of his cognitive skills but his affective and motor skills as well, finds that mere information about and identification of problems is not sufficient for a total learning process. It is in the analysis and synthesis of data leading to explorations of solutions, considerations of multiple alternatives and recognition of values which carries the learning process through to completion.

The drama, participation and involvement underlying the exercises is a major goal of Project Eco-drama. It was posited that in the union of subject matter with the students' own resources, a more

complete, far-reaching and enduring learning experience and situation could be provided for the student. With that basic assumption in mind, these exercises were designed with the intention of providing the student with an opportunity for personal growth, awareness and discovery. It is, perhaps, in such personal dimensions that the real change in attitudes, beliefs, and behaviors is most fully begun.

Some of the exercises are geared to begin a new unit and some require that the unit be well under way and that the students have information at their command. Some of the exercises are focused on the process of getting acquainted, some on the process of role playing, some on creation of data, some on communication skills and some are intended to be preparatory for the eventual creation of scripts. Many of the exercises participate in all of these general goals.

Since in your own classroom you may choose to structure your activities around subject matters different from the ones which are used here, it may be desirable to modify or adapt any of the following exercises for your own personal goals. These exercises are examples of structures and activities which may be used; as such, they rise above the limitations imposed by a specific topic. Flexibility, adaption and even metamorphosis is encouraged. To stimulate further development of exercises similar to these, included at the end of this section are some general guidelines and suggestions which may help in creating new activities for students which ask them to go beyond the process of data gathering to a greater awareness of themselves in relation to data gathered.

THE HUMAN ENERGY MACHINE

Time: one hour

Materials: none

INTRODUCTION

This exercise is specifically designed to acquaint team members with other team members. By working together to build a machine, the team will have a good foundation upon which to build their group work. In addition, through the exercise with the questions which preceed and follow it, the students can be introduced to the idea of human ecology and the wise use of human resources. Both are integrally related to the basic concept of environmental ecology.

GENERAL OBJECTIVES

By engaging in the exercise, The Human Energy Machine, the students will:

1. be introduced to the idea of "human ecology",
2. become aware of the potential of human ecology and
3. participate in a group experience which requires cooperation to achieve a goal.

THE EXERCISE

1. Take a few minutes to discuss:
   a. How does ecology relate to you as an individual?
   b. What does ecology imply to you as an individual?
   c. What changes does it ask you to make?
   d. What kind of information does ecology give us about ourselves?
   e. Do you consider yourself to be a resource? a technology? a part of a system?
   f. How about your own personal energy reserves?
   g. How about your own personal habits?
   h. Where do you fit into the energy crisis?

2. Divide the class into groups of 5-8 people. The introductory discussion is to be conducted with the class as a whole.

3. After discussion and introduction of the concept of human ecology tell the students that they will be creating through the use of their own resources of voice, body and mind, a human machine. The final product of the machine is to be something which will benefit mankind ecologically.

   Some suggestions: a smog eating machine
   a new car engine which gets 50 miles per gallon
   a nuclear reactor
   a solar power generator
   a solar power collector
   an oil slick eating machine

4. Students are then directed to assemble in their teams and begin working on creating their machine.

5. The facilitator is to wander from group to group encouraging activity and adding input . If a team has trouble getting started, ask one person to begin with a simple sound and a simple movement. Then another team member has to add on to that movement with something to keep the machine going. Continue until all team members are involved vocally and physically. Then instruct them to arrive at a purpose for the machine and perhaps make a few alterations.

6. Each team builds one machine.

7. Each person in the team must become a part of the machine and fulfill his function. If one person (one part) breaks down, the whole machine quits.

8. After teams have completed their machine and have practiced it a few times, assemble the class and have each team present its machine before the entire class. The other teams are to guess the purpose of the machine.

9. The follow-up discussion:
   a. How can we make better use of our human resources in order to either create or preserve own energy resources?
   b. Is your human energy machine a metaphor for an approach to the energy crisis?
   c. Together, you built a machine which was designed to benefit mankind. We often seem to build machines which do just the opposite. Do you agree or disagree? If you agree, why do we do it?

SOUND TOUR

Time: 5 days

Materials: a sound meter to measure sound levels

INTRODUCTION

The Sound Tour is a role playing exercise. It asks all students to assume a role in a defined situation and participate in the event as the character assumed. Role playing is a valuable technique to stimulate growth and learning for it involves the student in two ways. First, the student is asked to draw on his own resources, both cognitive and affective. Second, the student is asked to extend and expand his cognitive and affective domains by placing himself in the role of another to discover and experience an event from another's point of view.

The class is divided into teams of 4 to 6 students and each team will take turns leading the rest of the class on a sound tour. Each student will have two roles to play during Sound Tour. 1) When the student's team is the tour team, he will assume the role of a tour guide. 2) During the remainder of the exercise, the student will assume the role of a sightseer on the Sound Tour while another team becomes tour leaders. (This exercise, set up here as part of a unit on noise pollution, may be adapted to other kinds of content units by changing the subject matter of the tour.)

GENERAL OBJECTIVES

By engaging in the exercise, Sound Tour, the students will:

1. become more sensitive to their own immediate environment,
2. become more aware of the kinds of sounds they live with every day,
3. become more aware of differences in intensity and quality of the sounds they hear,
4. be able to communicate their knowledge about specific sounds to others in a situation in which participants are all involved and engaged in the activity.

THE EXERCISE

Divide the students into teams of 4 to 6. Each team of students is responsible for creating a tour for the rest of the class based on sounds which are found in and around the school area or within a reasonable walking distance. Each team must:

1. select the sounds to include in their sound tour,
2. research their sounds so that a tour guide can give a short, informative speech about each sound to be included on the tour, (the sound meter may be used at this point)
3. organize the sound tour (what sound is first, second, ..., how do we get there?, etc.,
4. conduct the rest of the class on the tour which the team has created.

If you choose, each team member may be responsible for at least one sound on the tour. In other words, each team member may select one sound, research it and speak about it during the actual tour. In addition, each team may elect to either include as many different sounds on their tour or make their tour about one theme or topic such as school sounds, nature sounds, or working sounds. When beginning the exercise, the teacher should consult with each group to insure that there is a minimum of repetition in the sounds chosen if possible.

A team may also want to prepare a script for its tour indicating the location (scene), the characters (tour guide and sightseers) and the dialogue (the speeches by the tour guides about the sounds). The dialogue of the scene might include:

1. where the sounds come from
2. how they are produced
3. the level of the sounds
4. the intensity of the sounds
5. the effects produced on the listeners by the sounds (either harmful or beneficial)
6. editorial comments

A team may also want to imaginatively extend their dialogues by including:

1. drawings of how a sound might look
2. verbal personification of sounds
3. the history of the sound

Allow the students several days to create their own sound tour. When all tours are ready to be conducted, meet with the entire class before beginning with the first tour. Explain to the students that not only are they responsible for role playing tour guides when their team is in charge, but that they are also to role play sightseers when they are being led on tours by other teams. In other words, everyone is to participate in the event, not just the tour team.

Before beginning the first tour, have the students sit for a moment and choose a character for themselves who might be on the sound tour (a vacationing college student, a family, an anthropologist). Give the students time to visualize and think about the character they have chosen.

1. What does he/she look like?
2. How does he walk?
3. How does he speak?
4. What is he interested in?
5. Why did he decide to take the tour?
6. What does he like? Dislike?

When the students have had enough time to create within themselves their sightseer roles, begin with the first tour.

VARIATION ON SOUND TOUR

A team or all teams may approach the sound tour as if they were a tour team and sightseers in the year 2001, visiting a museum of sounds of 1974.

This variation keeps the basic structure of role playing but expands the imaginative scene and situation. Not only must students design their sound tours and conduct them, they also must imagine how the futuristic perspective imagined by the students will form the basis for the selection and discussion of sounds.

NOTE

This exercise, as it stands, requires 5 days. To shorten the time required, two tours might be conducted simultaneously by dividing the sightseers into two groups.

FOUND SOUND

Time: 1½ - 2 hours

Materials: tape recorders
tape
record player

INTRODUCTION

This exercise is a series of activities, one arising out of another. It asks students to listen, to respond, to discuss and to become. It is specifically designed to lead into a unit on noise pollution, but the exercise could also lead directly into the building of a script on noise pollution. In most instances, the source, direction and completion of the exercise will find its genesis in the student rather than in external sources. It is in the experiences and interactions of the students that the exercise finds its goals and objectives. Not only may this exercise focus on sound but similar approaches could be adapted to units on air pollution (smell), landscape pollution (sight) and water pollution (taste).

GENERAL OBJECTIVES

By engaging in the exercise, Found Sound, the students will:

1. become more aware of the sounds which surround them,
2. become more aware of their responses, physical, emotional and behavioral, to the sounds they hear,
3. become more aware of other people's responses to sounds,
4. increase their understanding of noise pollution, its genesis, components and effects.

THE EXERCISE

1. Ask students to spend several days recording, finding and collecting sounds that they (a) like and (b) dislike. These sounds may also include songs, voices of friends, pets and any other sounds the students may discover.

2. You may also wish to designate specific areas for found sounds such as: around school
   specific industries
   city streets
   night sounds
   home sounds.

3. After students have had sufficient time (a couple of days) to gather their sounds, have them bring the sounds to class and share them with each other. Make a list of the sounds liked and disliked.

4. When all sounds have been shared and listed, begin discussing the event and experience with the students. Below are some general directions for discussion.
   a. What were the sounds most often mentioned?
   b. Which sounds were mentioned most often as liked?
   c. How much agreement is there about sounds people like to hear?
   d. Which sounds were mentioned most often as disliked?
   e. How much agreement is there about sounds people don't like to hear?
   f. What are some general characteristics or qualities about all of the sounds that people like?
   g. What are some general characteristics or qualities about all of the sounds that people dislike?
   h. Do the sounds which people like and dislike to hear tell you something about the listener?
   i. People are also sound sources. Does the sound of people's voices indicate anything to you? What kinds of responses do you have to people with certain kinds of voices?

1. soft	6. fast
2. loud	7. smooth
3. breathy	8. harsh
4. husky	9. sharp
5. slow	10. whiney

   j. A major concern of environmentalists is sound or noise pollution. When does sound become sound pollution?
   k. Can the sounds you like which you brought in today be noise pollution? Under what circumstances?
   l. How is noise pollution determined? What are your criteria?
   m. Can people also become sources of noise pollution? In what circumstances?

ALTERNATIVE EXERCISE FOR FOUND SOUND

If the students are not given specific areas for found sounds you may choose to center this exercise around one specific area such as home sounds.

The students are asked to spend approximately ½ hour every day for several days making note of or recording the sounds they live with. It is suggested that the ½ hour of listening time be done at several different times of the day so that a variety of sounds may be attended to.

One class period may then be designated as the time to report and share the sounds gathered.

GENERAL DIRECTIONS FOR DISCUSSION

1. Are there certain sounds which are characteristic of many homes?
2. What sounds did the students hear that they previously had been unaware of? (refrigerator, water pump, water running down the drain)
3. Are some home sounds "friendly" sounds? Which ones? Why?
4. Are some home sounds "unfriendly" sounds? Which ones? Why?

After the discussion is completed, divide the students into groups of 4 - 6. Each group will be responsible for creating a "sound story" for the rest of the class.

1. Each group will choose an event which occurs at home and which is associated with certain sounds such as washing dishes, cooking a meal, taking a bath or shower. Any way the students find to create sounds is acceptable, but no dialogue or speaking is allowed.
2. Allow the groups approximately 15 minutes to decide on the sound event they will make into a sound story and to create and practice their sound story.
3. When all groups are ready, have one group begin, but have the rest of the class turn their backs to the first group so that the only source of information from the sound story is the sounds themselves.
4. Allow each group approximately 2 to 5 minutes to present their sound story. The rest of the class will listen intently and try to identify the event and all of the individual sounds associated with the event.

THE DIRTY AIR COMMERCIAL

Time: 3 days

Materials: Anything the students can find and use.

INTRODUCTION

This exercise finds its roots in divergent and inverse thinking, both of which are characteristics of creativity. It asks the students to try and sell a product that 1) no one can ever buy and 2) that no one would ever want to buy. It is a totally imaginative situation which has no ideal result or previous history. As such, there are multiple opportunities for the student to find within himself the design and completion of the task. The student has no models to emulate and will have to exercise his own creative powers. However, parameters do exist, for the structure of the task is based on a commercial format, and each student does have his own concept of what a commercial is and how it operates. The instinctive understanding of what a commercial is will provide the guidelines for the task; the inverted subject matter will stimulate the creativity. The exercise may be adapted to other units in addition to air pollution by changing the subject matter, i.e., dirty water, junkyards, etc.

GENERAL OBJECTIVES

By engaging in the exercise, The Dirty Air Commercial, the students will:

1. increase their knowledge of air pollution,
2. increase their awareness of the hazards of continuing to pour pollutants into our atmosphere,

3. explore divergent thinking to expand their creativity,
4. employ communication strategies to inform and persuade an audience.

THE EXERCISE

Divide the students into groups of 3-4 and give them their task: Each group is to create a commercial for dirty air. The purpose of each group's commercial is to 1) make dirty air desirable, 2) make dirty air popular and 3) cite dirty air's redeemable qualities.

Each group may choose either a television commercial format, a magazine layout format or a radio commercial format.

If the format is a television commercial, then the students will create their script and gather or construct any props necessary for their commercial. The students will also perform their commercial in front of the class as if they were doing it for TV cameras.

If the commercial format is a magazine layout, then the students will gather the pictures needed, write the copy which may go with the pictures and lay out the page as if it were to appear in a magazine. The students will show their product to the rest of the class.

If the commercial is a radio format, the students will write their scripts and perform them for the rest of the class as if they were doing it over the radio.

AUTO WRECK

Time: 2 days (suggested)

Materials: copies of Karl Shapiro's poem, "Auto Wreck".

INTRODUCTION

This exercise uses a piece of imaginative literature, a poem, to create a climate for the students' discussion of machinery and its effects on the ecology. But moving beyond discussion of cars and machinery the students also become invloved in experiencing different points of view and exploration of new experiences.

GENERAL OBJECTIVES

By engaging in the exercise, Auto Wreck, the students will:

1. become more aware of cars and their effects on the environment, both nature and human,
2. experience objects and events from different points of view,
3. originally and creatively explore and write about different points of view.

THE EXERCISE

1. Hand out copies of "Auto Wreck" to the students and have them read it through.

2. Divide the class into small discussion groups (4-6 students) and let each group interact and discuss the poem among themselves.
   a. Who is saying the poem?
   b. What is he/she talking about?
   c. How does he/she feel about what he/she is saying?
   d. Why is he/she telling about the experience?
   e. Have you ever witnessed an accident or been in one?
   f. What happened?
   g. How did you feel?
   h. What did you do?

i. Are cars symbolic of something? What? An image or status?
j. Do people's personalities fit the car they drive? What kind of car is your dream car?
k. Why is speed in cars so important? Is speed also related to image and personality?
l. When the speed limits were reduced to 55 mph what did you think about it? Did you agree with the government's decision? Did you obey it?
m. How important are cars? Do they need to assume this degree of importance in our lives?
n. If we could no longer drive cars, either because of no fuel or no materials to build them, what alternatives would we have? What alternatives can you come up with? How would our lives change?
o. How dependant is man on machines? Could we live without them? Can we live with them?

3. After the groups have completed their discussion bring the class back together again. Ask students to write a poem, story or a play about either cars, machinery, speed or car accidents. Encourage them to use some of the ideas that came out of their discussions. Also encourage the students to experiment with points of view different from their own in their writing. For example, if a highway wrote a poem about an auto wreck what would it say? If tires wrote a short story about speed, what would they say? If cars in an auto graveyard were characters in a play, what would they have to say?

4. When the students have finished their writing, they may, if they choose, share their literature with the rest of the class.

"Auto Wreck" by Karl Shapiro

Its quick soft silver bell beating, beating,

MATERIAL REMOVED DUE TO COPYRIGHT RESTRICTIONS

Across the expedient and wicked stones.

DO IT YOURSELF

Time: 5 days

Materials: water analysis kits
water purifyer kits

INTRODUCTION

This exercise is very clean cut and specific in its goal, and the guidelines for successful attainment of that goal are precise and definitive. It asks a team of 3-5 students to get ½ gallon of water from the local lake, stream, river or other water sources and make the water drinkable and marketable. The basis for this task lies in the activity itself, the process of achieving a specific goal. By going through the actual steps of the process of purifying water, the students will have direct interaction with the problems and solutions of this aspect of ecology, water.

GENERAL OBJECTIVES

By engaging in the exercise, Do It Yourself, the students will:

1. increase their knowledge of water and its pollutants,
2. become more aware of the complexity of the task to purify water,
3. increase their knowledge of the ways in which water can be made clean again,
4. become more aware of the quality of water they themselves drink.

THE EXERCISE

1. Divide the class into groups of 3-5.

2. Give each group the task: Find and bring to class ½ gallon of water from a local lake, river or stream. Tap water is not acceptable. You have one week to make the water drinkable.

3. The following steps are one way in which the students may proceed:
   a. Begin by analyzing the water which has been brought in and list the reasons why it is not drinkable.
   b. Investigate methods which can be used to purify the water. (Different samples of water may have different pollution problems. Each problem implies a different solution.)
   c. List the possible methods which can be used to purify the water sample.
   d. On the basis of the analysis of the water sample and the investigations of methods to purify the sample, select one method which is the most potentially successful and feasible and purify the water sample.

4. On the fifth day, after all groups have completed their task, have each group bring in samples (before and after), report to the entire class the problems they faced, the solutions they discovered and the reason for the selection of one solution.

5. Attempt to persuade the class members to drink the water.

LIFE BUBBLE

Time: 1 hour

Materials: Inflatable plastic bubble or large box, closet or small room which allows students to enter and is enclosed.

INTRODUCTION

This exercise asks students to work as a group of individuals. As a group they will be individuals with differing backgrounds, attitudes and opinions who must work together. An imaginary situation is set up in which the outside air is heavily polluted with smog containing dangerous chanicals such as sulphur, formaldehyde, etc. The bubble contains the only clean air, The town council has decreed that each person may be allowed 5 minutes each day inside the clean air environment. The students must work together to make decisions and deal with the situation.

GENERAL OBJECTIVES

By engaging in the exercise, The Life Bubble, the students will:

1. increase their knowledge of air pollution and its effect on the body,
2. experience existing in an imaginary polluted environment,
3. gain knowledge about how various people (themselves included) might react in such a situation
4. be involved in a decision-making process involving priorities.

THE EXERCISE

1. Explain the situation to the students, i.e., that they are the townspeople, etc.

2. Assign or allow students to choose a role, such as a man with a heart condition, a pregnant lady, a child, a doctor, an old woman, the mayor, the president of a local factory which is contributing to the pollution, a worker in that factory, a mother with small children, a young father, etc.

3. Ask students to think about their character.
   (a) Who is he? How does he feel? What does he want? Of what is he afraid?
   (b) Consider this kind of pollution from the character's point of view. How would it effect his body? How would he react?

4. Have students (as their characters) choose the first 4-6 people to go into the unpolluted environment.

5. The people remaining outside should interact with each other in the polluted environment.

6. After 5 minutes the people in the bubble must come out and another group is selected to go in. (This is repeated until all students have spent time in the bubble.)

7. After the exercise is completed, discuss what happened. How did students feel inside the bubble? Outside it? (Physically and emotionally) How did they feel while waiting their turn inside? How did they feel about having to come out? What criteria were used to select the first group entering the bubble?

CAUSE AND EFFECT

Time: 3 days

Materials: Newspaper article "Messing with Nature"
poster board
tempera paints
found objects (scraps of paper, old cans, cigarette butts, etc.)
glue
scissors
tape

INTRODUCTION

This exercise uses the newspaper article as a point of discussion leading to the concept of cause and effect as it relates to the balance of nature, ecological equilibrium and human homeostasis. The exercise begins with the exploration of a specific instance of disruption of the balance of nature in Borneo and explores other instances of balance, interrelationships and chain of events. Moving from a specifically ecological-environmental concern to human universals, the exercise asks students to begin to see themselves and their lives as integrally related to ecology questions. By seeking to recognize the unity of all things, students may be better prepared to recognize and offer solutions to problems facing us today and in the future.

GENERAL OBJECTIVES

By engaging in the exercise, Cause and Effect, the students will:

1. become more aware of the concept of the balance of nature,
2. become more aware of the dangers of "messing with nature",
3. gain a fuller understanding of the concept of cause and effect,
4. begin to make applications of the concepts of the balance of nature and cause and effect to their own lives.

THE EXERCISE

1. Have the students read the newspaper article "Messing with Nature."

2. Engage the students in a discussion of the article:
   a. Discuss the chain of events in the article. What happened first, second, etc.?
   b. What was the rationale behind the parachuting of cats into Malaysin?
   c. How was the balance of nature disturbed?
   d. Do you think that nature balances itself? Can you give any examples?
   e. What happens when man intervenes?
   f. In the case of parachuting cats into Borneo, man's intervention was disasterous. Are there other instances when man's intervention has been beneficial?
   g. Henri Bergson says, "The present contains nothing more than the past and what is found in the effect is already the cause." What do you think of this idea?
   h. The newspaper article can provide a list of cause and effects comprising one event. Do you see your life as cause and effect?
   i. What are the major events in the chain of your life? Can you see a pattern of cause and effect?
   j. Chain of events can either be straight lines or a circle. Does nature's balance, nature's cause and effect seem to be a straight line or a circle? How about your life?

3. Ask the students to go outside and observe their environment -- people, objects, nature, animals. Instruct them to focus on cause and effect. Have students make a list describing cause and effect events that they see.

4. Have students make one list which is linear. Begin with something, trace its effect, which in turn becomes a cause. See how far away from the first thing on the list you can go.
   Example:
   a. I am writing on a piece of paper.
   b. Paper is bought at the stationery store.
   c. The stationery store gets the paper from a paper plant.
   d. The paper plant makes paper from trees.
   e. Trees are cut down and logged out from mountains and forests.
   f. Mountains and forests without trees and vegetation are ugly and dead.
   g. etc.

5. Have students make another list which is circular. Begin with something, trace its effect, which in turn becomes a cause. See if you can end where you began. Example: An animal eats a piece of worm infested meat, when the eggs reach the animal's intestines they hatch, grow into adult worms who

lay more eggs which are released by the animal and can be picked up by another animal and the cycle continues.

6. After the lists are completed, have students return to class and discuss their lists.

7. Following the discussion the students may choose one of the following activities.

   a. Students may create an art object using either materials provided or materials found and brought to class. Each piece of art is to be based on the principle of cause and effect -- either the comcept of linearity or circularity. The art object may be a literal representation of a chain of events or an abstraction using shapes, colors and varying tones.

   b. Students may create a piece of found-object sculpture. If the students wish to do this, they must first gather objects -- find objects (paper, leaves, cans, paper cups, etc.). When the students have collected all of their found objects, let them begin to create their sculpture. You may suggest to the students that the form of their sculpture reflect the material, content and composition. For example, if all of the found objects are non-biodegradable, then the students might make a human figure showing that man is becoming a non-biodegradable monster. Organic man, unified man in harmony with nature is slowly changing himself into an inorganic, unnatural object through his misuse and interference with the balance of nature.

from The Shelton-Mason County Journal, Shelton, Wa. Thursday, June 14, 1973

Messing with Nature

One day back in 1969, the villagers in Malaysin, Borneo, looked upward and saw a sky filled with cats. The Royal Air Force had parachuted the cats into the remote mountain village to solve an ecological dilemma that was literally bringing the roofs down.

The mass feline drop climaxed what had begun as a well-meaning campaign by the World Health Organization to control malaria in the village through the use of insecticides. The DDT did indeed kill disease-carrying mosquitos, but the chemical also accumulated in cockroaches. Some of the cockroaches died, but most built up a resistance to the DDT and survived.

Geckoes, the long-tailed, slippery lizards who ate the DDT-infested cockroaches, were more affected by the chemical. The speedy lizards, long accustomed to scampering up walls and across ceilings to evade hungry cats, began slowing down. They were caught and eaten by the cats, who, in turn, died.

The disappearance of the cats and geckoes was but the beginning in this disrupting ecological chain of events in the isolated village. Rats, their defiance mounting in direct proportion to the declining feline population, swarmed into the village carrying the threat of plague with them.

Then the caterpillars squirmed their way into this ecologically chaotic scene and the thatched roofs in the village began to collapse. Without the control formerly exerted by their predators the lizards, the caterpillar population grew out of control and the roofs began falling.

Parachuting in more cats eventually helped restore the natural balance in the village. But, in other circumstances, the cats may not have been the answer. Earlier in this century, a massive dose of cats was introduced into Australia to help control a fast-expanding nuisance population of rabbits. The cats did help control some of the rabbits, but, more importantly, they were attracted to the delicious bird population. The native birds, having little fear of this heretofore unknown creature, willingly cooperated, which then enabled the insects to flourish. In turn, the insects destroyed the great eucalyptus forests which provided sole sustenance for the cuddly koala bear, and so on. . . . Of course, the entire chaotic chain of events was rationalized as an "act of God" and, thus, outside of the foreseeable "logical" controls of man.

These stories are classic examples of "ecological backlash," that phenomenon often caused by the clash between man's technology and the forces of nature. "What happened in Borneo is another example of how man's simple attempts to control complex nature have lead to disaster as often as to solution." says Jonathan K. Waag, an instructor in biomedical sciences at Brown University. "We just don't know enough about nature to tamper with it successfully." After witnessing the clumsy attempts of water developers, strip miners, and land exploiters to do just that for years, only a simple, affirmative "Amen" must be added.

LANGUAGE

Time: 2 days

Materials: scotch or masking tape
construction paper
scissors
pens and pencils
glue

INTRODUCTION

This exercise is ecological, but in a broader more abstract way than specific concerns such as noise, air and water pollution. The basis of this exercise lies in the concept of human ecology and environment, human interaction and involvement. Fundamental to this exercise is the concept of language, language as it functions in communication, expression and meaning. It is here posited that language is what makes man, man; without language there would be no communication between people, no expression of individual selves and no meaning-making. But language considered as communication, experssion and meaning-making cannot be confined to verbal behavior only -- clothes, gestures and even nature itself can be seen as involved with language. This exercise asks the students to explore the concept of language and to discover new ways of looking at it.

GENERAL OBJECTIVES

By engaging in this exercise the students will:

1. examine their own concepts and definitions of language,
2. become more aware of languages other than verbal behavior,
3. experience a situation in which verbalization is impossible,
4. explore their own reactions to denial of verbalization,
5. experience a situation in which traditional forms of communication may not be meaningful.

THE EXERCISE

(Day 1)

1. Tape students' mouths shut and allow them several minutes to become accustomed to the situation.

2. The entire class is given a task which is to be completed by the class as a unit: Using the construction paper, scissors, pens, pencils, and glue they are to make a picture or a map or a village. The students must leave the tape on their mouths, but they must also complete the task.

3. After the class has completed the task, they may remove the tape and discuss what happened during the task.
   a. How did it feel not to be able to speak?
   b. How did it feel to not be understood?
   c. How did you communicate when your ability to verbalize was denied?
   d. How important is it to you to be able to speak?
   e. How important is it to you that you be understood?
   f. What problems in the completion of the task did you encounter when you could not speak? How did you solve those problems?
   g. Since the task was completed, some understanding and some communication must have occurred. Do you think that you developed a new language?
   h. How important was the new language to the completion of the task?
   i. Can you define language?
   j. Is man the only thing which has a language?

(Day 2)

1. Divide the class in half and present them with the following dramatic situation and task: One half of the class are earth astronauts which have landed on an alien planet in order to set up a star observation base. The astronauts are under assignment from the United World Federation to establish their observation site on the planet and begin setting up a community and relaying information back to earth. They are not aware until landing that the planet is populated.

   The remaining half of the class are the residents of the alien planet which the earth astronauts have landed on. The aliens have their own highly developed form of civilization and form of communication. They are very surprised and confused when they find that they have visitors.

2. Each member of each group is to become a character involved in the dramatic situation. Give each group 10-15 minutes to consider the following questions and to build their characters and roles.

a. How does your race confront the other race?
b. How do you communicate with each other within your group?
c. How do you feel about the other race?
d. Who are you (as a character in the dramatic situation) and what do you do?
e. What is the alien civilization like?
f. What is the community from earth like?
g. What does each civilization want?

3. Direct the class to begin an improvisation of this dramatic situation beginning from the moment that the astronauts leave their space ship and find the aliens waiting and watching to see what is going to happen. Remind the class of the decisions they have reached in response to the questions above. These responses are the basis for the improvisation of the meeting of the two civilizations.

4. After the students have had time to become involved in the improvisation and in the attempts to communicate with each other, stop the improvisation. (It is difficult to state precisely when it is the best time to draw the improvisation to an end. Your own judgement is the best guide, but be sure to allow enough time for false starts, hesitation and getting accustomed to the imaginary situation. If the students have some difficulty in the beginning you may give them a little coaching to get the ball rolling.)

5. Following the improvisation, begin discussing with the students what happened during the exercise:
a. What was the order of events which occurred?
b. How did the two races begin to confront each other?
c. How did they feel about each other?
d. Did they manage to begin communicating with each other? How or Why not?
e. Do the events which occurred tell us something about ourselves?
f. How did it feel when your language was not understood by the others?
g. How did it feel when you couldn't understand the others?
h. Again what is language?
i. Do <u>things</u> have a language? (art, buildings, rooms?)
j. Do things communicate something to you? Do they tell you something or make you feel certain ways?
k. Are clothes a language? Gestures? Facial expressions? Jewelry? Hair styles?
l. Does nature have a language?
m. Does it tell us things? How?
n. What does it tell us?
o. If nature could speak, what would it say? What would the wind say? The rain? The trees?
p. Would nature warn us? Fuss at us? Ask for help?
q. Is nature already warning us without speaking? What signs are there that we may not be paying attention to?

6. Have the class pretend that they are some aspect of nature such as water, air or grass and write a poem or short story from the point of view of nature.

7. Have the class pretend that they are some aspect of nature such as water, air or grass and imagine and develop a language for themselves. For example, the grass has no vocal cords but it still may have a language. What would be the language of the grass?

ECOLOGY FREE FOR ALL

Time: 2 days

Materials: none

INTRODUCTION

This exercise employs the use of debate techniques. It asks the students to take a position on a question and to evaluate in depth the "pros" or "cons" of the resolution. It is necessary also for the students to think on their feet in order to analyze and refute the opposing side's arguments. It is intended for use after the students have been working with the topic and have some information on it.

GENERAL OBJECTIVES

By engaging in the exercise, Ecology Free For All, the students will:

1. become acquainted in detail with the issues involved in the resolution,
2. become aware of the pros and cons of the resolution,
3. exercise their ability to reason,
4. experience the use of debate techniques.

THE EXERCISE

1. A debate resolution should be evolved from the ecological material under study, either by the students themselves or by the teacher. For example, Resolved: Shawnee National Park in Illinois Should be Opened for Oil Drilling.

2. Each student should declare his position regarding the resolution by choosing seats on either the "yes" (affirmative) or the "no" (negative) side of the room.

3. Each side will be given the first day to choose strategies, define major issues, assemble evidence, organize arguments, and determine speaking order.

4. At the conclusion of the preparation time, a representative of the "yes" position will give a four minute speech defending his point of view. The representative for the "no" position will then follow with a four minute speech presenting his group's point of view.

5. Rebuttals directed at previous comments will be given a two minute time limit. Following this, the opposing side may also give a two minute rebuttal. Alternating rebuttals may continue for a specified period of time. (20 minutes is suggested)

6. At the end of this time, a four minute concluding statement will be allowed for the "yes" position and the "no" position, in that order.

7. The debate's winner will be declared by an impartial judge or group of judges who will determine the winner based on use of evidence and refutation of the opposing side's evidence. (The judges should keep a flow sheet and be able to explain the decision reached.)

ALTERNATE EXERCISE FORM

1. Select two "teams" from the class consisting of 2-4 members each. Either assign or let them choose their positions concerning the resolution.

2. Ask the remaining class members to declare themselves either for or against the resolution by seating themselves on a given side of the room (as above). A count should be taken of each side.

3. As the debate progresses between the two teams, individual students will reflect their response to the arguments given by each team by changing sides of the room whenever an argument is strong enough to convince them to change.

4. At the close of the debate, the winning team will be declared by comparing the number on each side of the room at the end of the debate with the number on each side at the beginning of the debate.

THE TOWN MEETING

Time: 1 or 2 days

Materials: Several sets of index cards (9 per set) with the following information:

Card # 1: You are the mayor and have called this town meeting in order to solve the problem of the shortage of electricity. You will preside over the meeting. Your agenda follows:
1. call the meeting to order
2. have those present introduce themselves
3. state the problem facing the city
4. open the meeting for discussion
5. after discussion, list possible solutions
6. discuss solutions
7. decide on one which will solve the problem

Card # 2: You are secretary to the mayor, and you must keep the minutes of this meeting in order to report on them later on. You are a new resident of the city and new to the job as the mayor's secretary; as a result, you are not well informed about the problem facing the city but wish to learn more about it. You try to learn by asking questions.

Card # 3: You are a housewife who feels she cannot live without an electric toothbrush, dishwasher, blender and all of the other modern energy consuming devices. You feel that the city is responsible for supplying your electricity needs. Christmas decorations are very important to you.

Card # 4: You are the manager of the city power company. The mayor has asked you specifically to attend the meeting so that your knowledge about the power shortage and its possible solutions can contribute to the discussion.

Card # 5: You are a mother with a husband and 3 children. You heat your home electrically. Presently you are not able to maintain a temperature above 60 degrees in your home. (Your husband is with you at the meeting.)

Card # 6: You are the owner of the largest department store in the city. Most of your income comes from the business done during the Christmas season. You want your store to reflect the Christmas spirit to encourage buying. During the holiday season your store hours are 10:00 a.m. to 9:00 p.m. in order that as many people as possible can shop.

Card # 7: You are a father with a wife and 3 small children. You heat your home electrically. Presently you are not able to maintain a temperature above 60 degrees in your home. (Your wife is with you at the meeting.)

Card # 8: You are the head nurse at the City Hospital which has an auxilary power unit to handle emergency power blackouts. But this extra unit will not keep the whole hospital running for any period of time.

Card # 9: You are the owner of the town's only manufacturing industry which employs 100 people. You depend upon electricity to keep your plant running and to keep people employed.

INTRODUCTION

This exercise is a role-playing exercise in which groups of 9 students are asked to participate in a town meeting and come to a solution of the problem confronting the town. Be sure, in setting up a situation like this that each participant has a clearly defined role to play and that the problem to be solved is clearly outlined. The task to be completed during the town meeting requires active participation by all students as they role-play the characters assigned to them. The time allotted for this exercise is 1 to 2 days. If the students are organized the previous day and given their cards over night, this exercise could be carried out in one day. If so, allow 25 minutes for the actual town meeting and 25 minutes for discussion following the meeting. However, it might be better to have the town meeting the entire first day and the discussion on the second day. Again, this exercise is an example of a specific subject matter, but the form of the exercise may be used with almost any problem-type context.

GENERAL OBJECTIVES

By engaging in the exercise, The Town Meeting, each student will:

1. become involved in decision-making processes,
2. expand his own frame of reference by role-playing another person's and his point of view,
3. examine possible solutions to the problem of a shortage of electricity.

THE EXERCISE

1. Divide students into groups of 9. (This number is flexible. You may wish to add cards for other participants in the meeting or you may delete either Card # 5 or Card # 7.)

2. Present the students with the sample situation. Tell each group that they are residents of a town who have come together to participate in a town meeting called by the mayor. The problem facing the town is: There is an electricity shortage facing the town due to the energy crisis and the inability of the electric generating plant supplying power to the town to meet the demands of the city. A brown-out has already occurred and unless some corrective measures are taken there will be a black-out of undetermined length. It is the pre-Christmas season. (The teacher should continue to add technical details to the situation at this point which reflect the nature of the particular unit on power being taught.)

3. Hand out to each group of students one set of the index cards. The card the student receives is the role he is to assume during the town meeting.

4. Allow students several minutes to read the card and to think about their character so that they may role-play that character as completely and as fully as possible during the town meeting.

5. Find semi-private areas for each group to hold its town meeting and let the students begin. You may wander back and forth between town meetings to encourage participation and help the students keep in character and carry out the agenda.

6. When all groups have completed the agenda, bring students back together again and have the secretary from each group read the minutes of each town meeting.

7. Discuss what happened in each group.
   a. How were solutions arrived at?
   b. What differences are there in all of the solutions? What similarities?
   c. How did the different characters interact with each other?
   d. How did it feel to be your character and express that character's point of view?
   e. Did you agree with your character? Were his opinions similar or different from your own?
   f. If your character's views were different from your own, do you understand his point of view any more than you did before you role-played that character?
   g. Did some characters seem unwilling to cooperate or compromise? Who?
   h. How did you cope with this?
   i. Were all of the characters satisfied with the solution that was reached? Is the solution fair?

j. Was it difficult to arrive at one solution?
k. This was an imaginary situation with imaginary characters and only a few people trying to solve a problem. What would happen if this were a real life situation? Would you attend the meeting? Who else would be there? Would there be more problems to solve? How would you feel and respond if this were a real situation?

HOW TO GENERATE YOUR OWN EXERCISES

Each teacher and each classroom is unique. It is that uniqueness which makes teaching and learning an active and alive process. From our own experience with Project Eco-Drama and the exercises designed in conjunction with it, it is well known and understood that many different learning situations exist -- some are successful and others are not as successful. It is in an attempt to provide and create the more successful learning environments and opportunities that these guidelines for creating your own exercises are provided.

Given our particular learning situation and staff during the duration of Project Eco-Drama, the exercises above were generated and proved successful. But this was only one experience and situation; perhaps the individual exercises will not prove successful for you. Nevertheless, the ideas, formulations and basic structures underlying the exercises are potentially successful. These are listed below in order that you may employ them as you wish.

1. In order to begin generating your own exercises, select a topic area or subject matter to provide the informative, informational basis for the activity. However, keep in mind that you are ultimately teaching <u>students</u> not the <u>subject matter</u> and this will shape the direction of your exercise.

2. Think about and generally outline the desired results and general objectives you wish to achieve when you students are united with the subject matter through their participation and engagement with the exercise.

3. Consider your own situation -- your students, materials available, time, school regulations, your own strengths. Do not feel limited by lack of materials or regulations you must observe. These may be turned into advantages by inspiring ingenuity. If a tape recorder is unavailable or non-existant, students may have their own. If students are unable to leave the school ground, there is plenty of activity to observe and participate in where they are.

4. Think about and outline steps which will take your students from where they are through to the desired results and general objectives. Keep in mind while considering these steps or activities that the student himself is your main point of focus. Consider activities which involve your students on as many levels and as completely as possible. The goal of these steps is participation by each student in the activity, using the resources he already possesses within himself for discovery and experience.

5. Now you have created all the components of your own unique exercise. What remains is to integrate each component with the others and present your students with the new learning situation.

And to conclude, a note on the evaluation of the exercise. Step 2 asks for a decision to be made concerning the goals of the exercise. Since the thrust of these exercises are personal growth, awareness and sensitivity, these goals are, at times, extremely difficult to evaluate. The steps to achieve the desired results are specific in direction but general in outcome. Each student will understand and execute the directions in his own way. These divergent procedures and solutions are encouraged. They reflect each individual student and ask him to draw upon himself and realize his own human energy and potential.

SECTION III

Readers Theatre

READERS THEATRE

I. Introduction

Readers Theatre differs from more traditional drama by featuring the script (the idea in action) rather than a full illusion of reality on stage. Performers use little in the way of costumes, sets, or props; they can assume a variety of narrative and/or character roles. The narrative voice (or voices) is usually employed in a variety of ways to sharpen the focus of the arguments, to give emphasis, and to provide ironic comment for the audience. One of its greatest advantages is that it provides a more equitable balance between the intellectual and aesthetic aspects of a performance; the audience is helped to understand the implications in the script that it might not have otherwise looked for.

Scripts for Readers Theatre may be assembled from a wide variety of materials, e.g., newspaper and magazine articles, transcripts of conversations, government reports, poetry, prose, and drama. Much factual material that students peruse while researching environmental topics can be used in their scripts. The process of script creation (for the compiled script) involves 1) careful and extensive exploration to find ideas and materials, 2) a unifying element -- a theme or idea, and an over-all structural form, 3) usually some original writing, 4) the ability to cut material intelligently and to see possibilities in the juxtaposition of two unlike things, and 5) the ability to view the material in terms of "character voices" and dramatic action. The script, through the juxtaposition of its various parts, should make a

statement having a total effect greater than the sum of its parts. It should have a progression, i.e., a building to a point of awareness.

Inherently, a "compiled" script created for Readers Theatre combines research with creative activity, therefore, becoming a double-pronged approach to learning. A script can begin with an idea (in this context, some aspect of ecology). It can be a question of general understanding, such as, "Of what importance are birds in my life?" Or, it can be a specific problem: "What are the effects of burning my trash outside on me and my community?" "Why should I curtail the use of my car?" "If we stop burning, what happens to rat control?" Rather than merely examining such questions academically with lectures or seminars, Readers Theatre allows the examining of these situations both affectively and cognitively.

For example, let us assume that after researching their community, a group of students decides that the prohibition of trash burning versus rat control is a basic issue they wish to bring to the attention of the community. In building their script, they may want to give the audience an experience of the long-range effects of air pollution through a scene from Norman Spinrad's "The Lost Continent" and then oppose it with the "rat fight" scene from Richard Wright's Native Son. This could be combined with statistics on children being bitten by rats, statistics on future probabilities of air pollution and its effects, and numerous other materials on both sides of the issue.

As one form of script construction, sources can be creatively balanced in the script, one against the other, building tension to an impasse. The created script then may be performed by the students before a local civic group as stimulus to subsequent discussion about

the problem. Another format allows the students to build several possible solutions into the script to be "tried on" by the group. Either way the way is prepared for a rational discussion of the specific problem.

Readers Theatre as a performance medium, has several distinct advantages. (1) It provides an opportunity to convey information in an aesthetically-persuasive manner; (2) It can tend to stimulate active participation on the part of the audience; (3) It can function as a powerful learning tool in the public school, the church, service-related organizations, or governmental departments; and (4) Its regimen of script research, analysis, construction, and performance allows a cognitive-affective involvement with rich learning results.

The following steps constitute a possible approach to attaining a successful compiled script.

II. Script Creation

A. The initial step is the selection of the topic or theme.
   1. This is essential in order to have something around which to build the script. This topic may be as narrow or as broad as will be appropriate to the circumstances.
   2. An example of a fairly specific topic is seen in the accompanying script on the car. A somewhat broader and more general topic is exemplified by the water script.

B. Read and gather literature relating to the selected topic.
   1. Material may come from numerous published sources: novels, short stories, magazines, newspapers, poetry, music, etc.
   2. Literary material is not the only available source, however. Others include: grafitti, news, commercials and advertisements.
   3. Original materials may be created for inclusion and/or transition.

C. Consider the desired response and decide upon focus and point of view.
   1. If the purpose of the script is to inform people about our polluted water, for example, material should focus upon this topic.
   2. If the purpose of the script is to change people's thinking about the subject, the material selected should express that point of view.

D. Sift through the gathered material and select pieces which fit the topic and express the desired point of view.
   1. Do not neglect the effectiveness of satire and irony. A piece of material which seems to express the opposite point of view may make a strong point if presented satirically.
   2. Once a topic is decided upon, it may be necessary to seek out more material to fill out the script.

E. Arrange material to achieve the "total effect equal to more than the sum of its parts" and to make a statement.
   1. Juxtaposition of pieces and ideas is important here. The effect of a particular piece following another may have a greater impact than the piece used individually. Juxtaposition also generates new meaning. By placing two selections together, meanings often emerge which are not inherent to either of the selections alone.
   2. Transitions -- either from the material itself or original -- are crucial in helping to give textual cohesion and unity.
   3. Be cognizant of the need for climax and for rhythms, alternation between action and narration, between heavy and light, etc.
   4. Seek to anticipate the attention span of the audience and the need for a change of pace.

III. Staging of the Script

A. Staging may be as simple or as elaborate as is appropriate to the material and particular circumstances. It should not, however, detract from the literature and should add to the dramatic effect.

B. The director has the responsibility of deciding upon the style of staging. Choices range from placing performers holding scripts on stools behind reading stands to using fully memorized lines and onstage focus.

C. After making this decision, the director should consider the various following aspects.
   1. Focus may be either onstage focus in which the interpreters to one another onstage and may even at times establish eye contact with the person being addressed, or offstage focus in which the performers address the audience or place the locus of action visually out in the audience space.
      a. It is also possible to combine both onstage and offstage focus within the same production.
   2. It is important to choose carefully the number and quality of voices to be combined for the production. Both balance and variety are necessary.
   3. As was indicated earlier, movement may range from very little, for example subtle gestures indicating inner tensions and reaction, to overt physical action. The deciding factor for the director should be found within the material itself.

4. The use of effects such as lights, sound, etc., may cover a wide range. The decision for this also should come from within the material and be balanced with the circumstances of the production, i.e., a production which might be taken to various groups probably wouldn't use the same amount of effects as a production which will have all its performances on an equipped stage.

There are many successful ways in which one might proceed in creating a script. This is merely an example given to provide stimulus for creating your own. For more detailed information regarding Readers Theatre and the creation and production of a script we recommend The Readers Theatre Handbook (Revised Edition) by Leslie Irene Coger and Melvin R. White. It is suggested that working with a script should follow the use of the various exercises which employ role-playing such as The Town Meeting, Sound Tour, The Human Energy Machine and The Life Bubble.

IV. Sample Scripts

The three readers theatre scripts which follow are idealized examples of the kind of product which may emerge from the juxtaposition of an ecology class with a class in readers theatre. The scripts were first created by some of the students in the project and then shaped and revised to a certain extent by the project staff. They are not perfect, but represent a higher level of excellence than was achieved by the students in their first attempt. High school students will usually not be able to create a "tight" and polished script upon first attempt. But they should be encouraged to revise and to keep working on the script until the problems in it are solved.

The three scripts represent three slightly different approaches:

1. The script on water contains very little original writing; it

is almost completely composed of parts of poems, essays, sketches, etc., but all materials which were previously created. It represents a rather general approach to the problem of water pollution, with no solution included, except the brief lines from the Illinois pollution legislation. Thus its appeal is primarily affective.

2. "Have Car, Will Travel" is composed of approximately 50% previously created material. It uses old songs with new lyrics and suggests a "song and dance" approach to staging. The subject matter is narrower and it does include some specific suggestions for community action.

3. "Mister Energy" is an all original script designed for children. The information is fairly general and simplified. The action element is enlarged. The creation and performance of such a script would be an excellent project to enable high school students to contact younger chilren.

NOT A DROP TO DRINK

Readers Theatre Script on Water

"Not a Drop to Drink" was removed due to copyright restrictions.

MR. ENERGY AND THE WHIZ KIDS

Readers Theatre Script on Energy

For children in kindergarten through fourth grade.

To inform children of the fact that there is an Energy Crisis, and what they themselves can do to help, both at school and at home.

ENERGY SONG

Who's a friend to you and me?
Who runs our cars and powers TV's?
Up in the sky, what is it you see?
Hey! It's Mister Energy!

He stands for coal and oil and gas
And you can bet he'll always last.
If we use him right there'll always be
A friendly Mister Energy.

But now he's coming all unwound
Because his motor's running down.
So all pitch in -- that's you and me --
We'll salvage Mister Energy

CHORUS:

Running down---
Running down---
Let's all pitch in to save Mister Energy!
He's the one who really is
A friend to you and me.
E-N-E-R-G-Y
Mister Energy!

Biff: (rushing on) Am I late? I had to wait for my dad to get home to drive me over.

Toby: No, you're okay. Patty isn't here yet either.

Suzie: It sure is cold in here. Why don't we turn up the heat? (Does)

Patty: (entering) Hi, everybody! Sorry I'm late. My folks got me a new stero for my room, and I was having so much fun with it that I forgot to watch the time. Oh, wow, I think I forgot to turn it off. Oh, well, Mom will probably catch it pretty soon.

Suzie: Hey, why are we all really here, anyway? I just came because Toby called and said I should meet you all here for an important meeting.

Toby: Well, Mr. Jones told us today in science class that there was going to be a meeting tonight with a neat friend who wants us to help organize a club. I think he said the guy's name was Mr. N. Ergy.

Biff: That's sure a strange name. What kind of club is it going to be, anyway?

Toby: I don't know. I guess we'll find out when Mr. N. Ergy gets here.

Patty: Where is he, I wonder?

Toby: Oh, he'll be here. Mr. Jones said to wait for him.

(Sound effect: electrical buzzing)

Suzie: I hear something!

Mr. E: (rolling in, summersaulting to his feet) Hi, everybody!

All: Who are you?

Mr. E: Why, I'm Mr. Energy!

Toby: That must be who Mr. Jones meant--Mr. N. Ergy--Mr. Energy! Right?

Mr. E: Right!

Suzie: But who are you?

Biff: Where do you come from?

Patty: What do you do?

Mr. E: What do I do? Why I make the whole world go!

Suzie: The whole world?

Mr. E: You bet! I make your cars run, and ships and planes, not to mention heating your homes and pumping your water and running the factories that make all the things you use every day.
(He has been getting steadily weaker throughout the speech)

Biff: Wow! Energy does all that? You do all that?

Mr. E: That's right. But the trouble is, I'm running out.

Toby: I don't understand. I mean, when my dad needs gas for the car, he just goes to the station and gets it, and when we turn on the switch, the lights come on.

Mr. E: Well, you see, kids, it'sa long story. I'm really a symbol. I stand for all the energy sources we've been talking about. When they're okay, I'm okay, but when they're running out, I just can't go on, and right--now---I'm---really----worn-----out. (He sinks to the floor)

Patty: Mr. Energy! What can we do? Can we help you?

Mr. E: Well, yes, kids, you can. But first I need some more energy. You're going to have to sing the Energy Song to get me some strength.

Biff: The Energy Song? What's that?

Mr. E: It's a very special song that helps me get energy from my friends, The Energy Sources. Now, do any of you know what a generator is?

Toby: Well, sort of, I think. It has something to do with making electricity, doesn't it?

Mr. E: That's right, and that's what I want all of you to become, a kind of generator. (Positions them to form machine) Now, when you sing the song, you'll help give me energy by using the Energy Sources to make electricity and I can get stronger again.

(He teaches them the song. The kids make appropriate machine-like movements. Throughout the song, Mr. Energy is getting stronger)

There, that's much better.

Suzie: Will you be okay now, Mr. Energy?

Mr. E: For a little while, Suzie, but it's going to take a long time and a lot of work to fix me permanently. And that's why I'm here, because you can help.

Patty: We can help? How, Mr. Energy? What can we do?

Biff: Do you need light switches? Is that what we can do?

Toby: Or what about more gasoline stations?

Mr. E: Hold on kids, there's more to getting energy than that. Electricity doesn't just come out of the switch. It has to come from somewhere, and gasoline has to come a long way before it comes out of the pump at the gas station.

Biff: Where does it come from?

Suzie: I think maybe I know.

Patty: Where?

Suzie: Out of the ground.

Toby: Quit kidding us, Suzie. Energy doesn't come out of the ground. (Kids laugh)

Mr. E: No, kids, she's right. Coal and gas and oil do come from the ground, and they're our major sources of energy.

Patty: I don't understand, Mr. Energy. How does energy get out of the ground?

Mr. E: Kids, I have an idea. How would all of you like to take a trip underground and learn all about it for yourselves?

Biff: Underground?

Mr. E: Yes, there's a whole land underground where all our Energy Friends live. It's called Energyland, and if we go there, you can meet them and learn about what they do. Would you like to go?

Suzie: Oh, wow! Sure, Mr. Energy, I'd love to!

Patty: Me, too!

Biff: So would I!

Toby: Do I need to call my mom?

Mr. E: No, Toby. We won't be gone very long.

Suzie: How do we get there, Mr. Energy?

Mr. E: First, everybody close your eyes. (also to audience) Now--5--4--3--2--1--BLASTOFF! (Buzzing noise, which

fades out)

Oh, wow, kids. I just don't have enough energy left to take you there and me too.

Toby: (opening eyes) Could we help by singing another verse of the Energy Song?

Mr. E: Yes, that might help. (Kids form machine and start to sing) That's not doing it. We need more help. (to audience) We need everyone to help. (Kids ask audience to join in.) Ah, that's better---better---better---NOW! Start the countdown! 5--4--3--2--1--BLASTOFF!

(Sound effect: electrical buzzing, then appropriate Energyland music)

Mr. E: Well, kids, here we are.

Patty: This is really a strange place.

Suzie: I never imagined it would be like this underground.

Biff: Hey! Look over there! What's that? (Sees Carrie Coal)

Toby: (looking) It's all black and shiny. Is it--is that coal, Mr. Energy?

Mr. E: It sure is, Toby. Would you like to meet her?

Suzie: Her?

Mr. E: Yes. Remember I told you that our Energy Friends lived in Energyland? Well, that's one of them. She's Carrie Coal. (to Carrie) Hello, Carrie. I've brought some friends down to meet you. This is Suzie, and Toby, and Patty, and Biff.

Carrie: Hello, kids. I'm sure glad you came down with Mr. Energy to see us. It's really nice to have company.

Mr. E: Carrie, these are friends who found out that we need help and they want to find out what they can do.

Carrie: That's wonderful, because we are in trouble. I'm in trouble.

Patty: In trouble? What kind of trouble.

Mr. E: Carrie, why don't you start by telling the kids what you are and where you come from.

Carrie: That's a good idea, Mr. Energy. I like to tell that

story. Why don't you start by taking a look at me. As you can see, I'm black and very shiny. And feel me, I'm slick and hard.

Biff: (does) Wow! You are!

Carrie: And you probably know that I come from beneath the ground. Now, I know that a lady isn't supposed to tell her age, but I am millions and millions of years old.

Toby: You sure don't look old, Miss Coal.

Carrie: Why, thank you, Toby. But I am. Millions of years ago, when the earth was covered with swamps, and there were huge plants and dinosaurs, I was born.

Biff: Wow! I've read about dinosaurs. Lots of them were huge and some of the other animals had big wings.

Toby: Hey, let's all pretend we're dinosaurs and living in the swamp where Miss Coal was born.

(He pretends to be large dinosaur, making appropriate noises. The other kids do the same)

Carrie: That's what it was like. But after a while, things began to change. The swamps began to sink, and the animals and plants began to die and got all squashed down, and that's how I began. After years and years, more and more weight piled up on me and that, along with the heat, turned me into this black, shiny rock that you see now.

Suzie: That's really a neat story. I didn't have any idea that's where coal came from.

Carrie: For years and years I lay in the ground and no one knew I was there, but finally I was discovered, and at first, people thought I was magic.

Patty: Magic! Why?

Carrie: Because I could burn. Since I was made out of wood and plants in the first place, I could help people heat their homes. And then they realized I was their friend. They began to mine me when they found out they could use me for fuel and to cook with and to run their factories.

Biff: I saw a movie about coal mining. Men with helmets and picks go underground to bring you out in little carts.

Carrie: That's right, Biff. Why don't you show the others?

(Biff does. The kids pantomime chipping away at Carrie with picks and chipping noises.)

Mr. E: Now that you know something about Carrie's history, she can tell you what the problem is now.

Carrie: The trouble is I'm running out. I've been mined so much and used to run so many factories and heat so many homes that I'm getting littler and littler every day. I may soon be completely gone. (Sound effect: mining noises) Oh-oh, here they come now for a load! Oh--Oh--Oh-- (more noise. She reacts to being mined) See what I mean? At that rate there'll soon be none of me left.

Toby: Oh, Carrie, that's terrible. I don't want anything to happen to you. Is there anything we can do?

Carrie: Well, yes, there is. You can help by slowing down the process.

Suzie: Slowing down? How can we do that?

Carrie: By using less of me.

Toby: Using less? You mean like less heat in our homes?

Carrie: That's one way and a very good one.

Patty: But Carrie, where we live, it snows in the winter And gets very cold. We really need you.

Carrie: When you need me I really want to be there. But maybe you don't need as much of me. What about putting on a sweater instead of turning up the heat when it's just a little chilly?

Suzie: That's a good idea. My mom does that at home sometimes when she's there by herself.

(Sound effect: glubbing and sloshing. Peter Oil enters)

Peter: Hi, Carrie. What's going on here?

Carrie: Hello, Peter Oil. I'd like you to meet some new friends of mine. Mr. Energy brought them down here to meet us and to help us with our problem. Toby, Suzie, Patty, Biff, I'd like you to meet Peter Oil.

Peter: Hi, kids. Glad to meet you. Any friend of Mr. Energy is a friend of mine.

Kids: Hello, Mr. Oil.

Toby: Mr. Oil, do you live down here, too?

Peter: I sure do, Toby.

Carrie: Peter's my brother. He came into the world in almost the same way I did.

Peter: Carrie probably told you how she came from the swamps with all the big plants and dinosaurs. Well, when the pressure and heat turned her into a black rock, it turned me into a black liquid. See?

Biff: (touching him) Ooh--you're sticky!

(Sound effect: pumping and sloshing)

Peter: Blub, glub. (action of being pumped) Excuse me, kids, someone's pumping some of me out. Glub (etc.)

Patty: Gee, Mr. Oil, are you used for the same things as Carrie Coal?

Peter: Yes, I am. I can heat homes and run factories and make cars run. And like Carrie, I'm being used up so fast that I'm going to be gone one of these days.

Toby: Did you say you make cars run, Mr. Oil. I thought gasoline did that.

Peter: Well, you're right Toby. You see, gasoline is one of my children. Would you like to meet her.

Suzie: We sure would!

Peter: All right, I'll call her. Ethyl!

Ethyl: (entering) Yes, Father. Coming.

Peter: Ethyl, I'd like for you to meet some new friends that Mr. Energy brought down. Kids, this is my daughter, Ethyl Gasoline.

Ethyl: Hello, kids, welcome to Energyland. I see you've already met my father and my aunt, Carrie Coal.

Toby: Do you really make cars run?

Ethyl: I sure do, and boats and planes, too.

Mr. E: Yes, kids. All engines need Ethyl.

Biff: There's something I don't understand. Ethyl, if you're Mr. Oil's daughter, why don't you look more like him? He's black and sticky and you're shiny and light.

Peter: Well, you see, Biff, it takes a lot of work to get gasoline from oil.

Patty: How is it done, Mr. Oil?

Peter: First of all, I'm taken out of the ground by big pumps. Then I'm put into a big cooker and cooked for a long time at a high temperature. Finally, after all that cooking, I come apart, and part of me is oil.

Suzie: Boy, that's really neat. What happens to the rest of you after the gasoline is taken out?

Peter: I'm used for lots of things and have lots of other children.

Biff: Who are they? Do they live down here too?

Peter: No, Biff, they live up on the surface. I imagine you know some of them. They are Grease and Lubricating Oil, and I even have a step-son named Plastic.

Patty: We have a lot of plastic things in our house, like in the kitchen.

Toby: Yeah, and I have a plastic frisbee. I guess you're really important to us, aren't you, Mr. Oil?

Peter: Yes, I am Toby, but the problem is, I'm running out.

Carrie: And I'm runnin out!

Ethyl: And if Peter Oil runs out, I can't even be born!

Mr. E: You see, kids, the problem is that too many people are using too much of our Energy Friends. There's just not enough to go around and one of these days, there may not be any left at all.

Peter: Ooh--here they come again for more oil! (Sound effect: pumping and sloshing. He reacts to this.)

Carrie: And for more coal. (Sound effect: chipping. She reacts.)

Ethyl: Ohoo, that tickles!

(This continues for some time. Carrie and Peter and Ethyl are exhausted when it ends.)

Mr. E: You see, kids, this is a real problem. Our Energy Friends are about used up and they're really getting worn out.

Toby: Wow! This is terrible! I've heard on T.V. about an

energy crisis, but now that I've met you and you're my friends, I'm really beginning to understand how bad it is.

Mr. E: That's exactly why I brought you all down here to Energyland, because now that you understand the problem, you can do something to help.

Biff: We sure will--any way we can.

Suzie: Yeah, we sure don't want anything to happen to all of you.

Carrie: This is really great. We sure do need friends like you.

Ethyl: Ooh--they're ready to start pumping again. I have to get back to my tank.

Carrie: And they'll be back for more coal soon. I have to go too.

Peter: Me, too. I've got a lot of work to do.

Mr. E: Yes, kids, it's getting late and we need to be getting back, too. Our Energy Friends work hard and we need to let them get busy.

Toby: But how can we help?

Suzie: Yes, what can we do?

Peter: You'll find a way. Mr. Energy can help. That's what he does, you know. He helps us. He's our symbol.

Mr. E: That's right. They keep me going, so I help them whenever I can.

Peter: Goodbye, kids.

Kids: Goodbye Peter, and Carrie, and Ethyl.

Carrie: Bye.

Ethyl: Goodbye, kids.

(They exit.)

Mr. E: Well, kids, shall we sing the Energy Song and get back?

Kids: Okay, Mr. Energy.

(They form the machine and sing the song.)

All: 5--4--3--2--1--BLASTOFF! (Music)

Patty: Whew, I'm glad to be back.

Suzie: But I'm glad we met our Energy Friends. They certainly help us.

Toby: I didn't know I was hurting anyone when I was turning up the heat or leaving the lights on.

Biff: How can we help save them--and you--Mr. Energy?

Mr. E: Well, that's why I'm here. Aren't you forgetting something?

Toby: Oh, you mean the club you're going to help us organize? Does it have something to do with saving our Energy Friends?

Mr. E: It sure does. In several other places, kids just like you have started clubs whose main purpose is to help conserve energy and save our Energy Friends. I was hoping that maybe you'd like to start a club like that here.

Suzie: That's a great idea!

Patty: Yeah, I'd like to belong to a club like that.

Toby: Me, too.

Biff: And me. Probably we could get all our friends to join.

Mr. E: That's exactly what I was hoping you'd say. In that case, I now call the first meeting of the Whiz Kids Club to order. Let's keep in mind that the main purpose of our club is to conserve energy to help save our Energy Friends. Now what can you do?

Toby: Mr. Energy?

Mr. E: Yes, Toby?

Toby: I think maybe that <u>we</u> haven't been doing a very good job of living up to the purpose of the club. We're partly to blame for hurting Miss Coal and Mr. Oil and Miss Gas, and for you running out of energy.

Suzie: Yeah, I turned up the heat when I came in when I really just needed to leave on my sweater.

Biff: And I had Dad drive me over when I could have walked or ridden my bike.

Patty: And I went off and left my stereo playing.

Toby: I think we have to start saving energy before we can teach other kids how to do it.

Mr. E: That's right. Do any of you have any more ideas about saving energy?

Suzie: Will it help if I turn off the lights and the T.V. when no one is using them?

Mr. E: It sure will.

Toby: I'll tell Mom and Dad to set the thermostats a little lower, especially when no one is home.

Patty: And we can wear more warm clothes instead of turning up the heat when it's just a little chilly.

Suzie: I'll walk to school and tell Mom and Dad they don't have to drive me any more. I'll walk with some friends so their parents won't have to drive them, either.

Biff: And don't forget--if it's a little too far to walk, we can ride our bikes.

Mr. E: Another good thing for you to tell your mothers is not to open the oven door when she's baking because all the heat gets out; and when she's washing clothes, she should load the machine completely.

Biff: If we keep from opening and closing doors all the time, that will help cut down on heat loss.

Mr. E: These are all great ideas, kids. If everyone would do them, it would help to save Carrie Coal and Peter Oil and Ethyl Gasoline. I think you all learned a lot in Energyland.

Kids: We sure did, Mr. Energy.

Toby: Thanks a lot for coming, Mr. Energy. We really didn't know how important our Energy Friends were to us. Now that we do, we're going to start today to help save them.

Mr. E: That's great, kids. And now, I have to go off and organize more clubs. The more people we have helping, the more chance we have to save our friends before it's too late. Why don't you sing the Energy Song again to send me off?

Biff: Okay, Mr. Energy. How far do you have to go?

Mr. E: About one hundred fifty miles, so I'll need lots of help. (to audience) All of you can help, too.

(The kids form the machine and get ready to sing)

Kids: Goodbye, Mr. Energy. Have a good trip.

Mr. E: Goodbye kids.

Toby: (to audience) Okay, everybody, help us send Mr. Energy on his trip.

(Everyone sings the song. Mr. Energy revs up, gets power.)

Mr. E: Okay, kids, now!

All: 5--4--3--2--1--BLASTOFF! (Sound effect)

(Mr. Energy exits, kids follow him off, waving and calling goodbye.)

HAVE GAS — WILL TRAVEL

A Script on energy and the automobile

Six readers - 3 Male - #2, #4, #6

3 Female - #1, #3, #5

This Script is designed for use with 4 to 6 easily movable seats (such as stools). It will be more interestingly staged if platforms are used for different levels, but this is not necessary. The whole production should be quite mobile using movement and rearrangement of seats to make transitions between the small vignettes.

In mood this is a lighthearted approach to the subject, but one which should also carry information and serve a persuasive function. Voices may be shifted around to suit the needs of different performing groups.

HAVE GAS — WILL TRAVEL

Tune: My Merry Oldsmobile

(Make this a mini-prod. number -- lots of movement).

Guys: Come away with me Lucille
In my merry automobile
We'll go putting through the fog
And contribute to the smog. (All cough)

(Girls joining guys. Make chorus line — turn and follow leader — holding on — mimic traffic jam).

All: We'll be carefree, wild and gay
As we creep along the way
With cars behind and ahead of us
On a Jammed-up un-free way.

(Chorus line again).

We will fill up our machine
With ethel gasoline

Indiv.
Voices: Fill'er up Fill'er up Fill'er up

And head out across the land
In a motor caravan.

(Become individual cars, exploding out from center in all directions. All readers can be moving cars or some can be gas station — should be lots of movement and car noises. General pattern of movement should be out to 4 corners of stage and then back in to center on last "Fill'er up."

#1 California

#2 Fill'er up

#3 Boston

#4 Fill'er up

#5 Yipee! Mixico City

#6 Fill'er up

#3 Salt Lake City

#4 Fill'er up

#1 Montreal

#2 Fill'er up

#5 Miami

#6 Fill'er up

(As the group comes to center they should seem to casually come together in an interacting pictorial arrangement for the next bit).

Guys: Fill'er up????

Girls: Out of Gas!!!

SOUND: Effect of air escaping from balloon or some such Can be made by readers themselves.

#2 Cars are wicked, poets think.

#1 Wrong as usual,

#6 Cars are part of man.

#4 A man without a car is like a clam without a shell.

#2 But carless man is careless and defenseless.

#5 Ford is skin of present animal. Automobile is shell.

All: Get yourself a shell or else.

#2 Since the automobile is so important in man's life today, he has added options and luxuries to make his driving hours more pleasant.

#4 But, as the American public is slowly finding out, you have to have gas to run a car — and —

All: A gallon of gas doesn't go far these days.

#1 So — we present our "Conservation Lessons for Motorists."

SOUND: (Group sings a few bars of School Days as they pick up stools or chairs and arrange them in the suggestion of a classroom. Not too literal. An interacting arrangement is more important).

#1 Class, if you'll please direct your attention to the front board, you will observe a 1974 model of an average car. This car gets only about 13.5 miles to a gallon of gasoline. In 1951 even a big Cadillac could go for 20 miles or more on one gallon of gas.

#6 Heavy! Heavy!

#1 Yes! Excessive Weight is a major contributer to fuel consumption. If 400 lbs. were taken off the average car today, the automobile would be able to get at least one more mile for each gallon of gasoline. We could shorten the frame six inches.

#6 Cool, Man, Cool!

#1 Exactly! What about those air conditioners? An average air conditioner reduces mileage about 10% when it is turned on, and 20% on a very hot day in heavy traffic.

#2 and #4 Tune: Casey would waltz with the Strawberry Blonde

(Song should be staged).

Harry would drive in his automobile
With his air conditioner on
No attention he paid to the heat of the day
With his air conditioner on

Though gas prices are booming
And it's gas consuming
He drove without worry or care
Under grey skies or blue
At a cool 52
With his air conditioner on.

All: Clap, cheer, make cat-calls

#1 Class! Class! Come to order

#6 Out of site — man!

#1 Out of site?? Oh yes, of course!
Part of the problem lies out of sight of the motorist,
Under the hood. This villian is the automatic transmission.
It increases fuel consumption by 6%. His accomplice — the emission control devices — account for 7% of fuel consumption.

#3 But I thought we had to stop polluting the air with automobile engine fumes??

#1 Of course, we do have to try to keep the air clean.

#4 Well, what's a guy going to do? It's either pollute or not commute!

#2 Hey guys, he made a rhyme — pollute or not commute — Hey!

All: Pollute or not commute — Hey!
Pollute or not commute — Hey!
etc.

Inter-mixed voices: (Chant)

(Should be lots of movement here — class goes wild — movement routine, etc).

If you don't give a hoot
You can rip off the shoot
Be a gung-ho commuter
A hopped-up polluter

Give clean air the boot
Go out on a toot
Let the energy shoot
and pollute, and pollute, and pollute and pollute — etc.

#1 (Trying frantically to bring order) Class! Class!

(Finally restores quiet) Wait! There are some things you can do which will both save gasoline and help the clean air problem.

All: Well?

#1 For example, if you slow down your speed it will save, in some cases, as much as 20% on gasoline. That would conpensate for the extra consumption caused by the anti-polution controls.

#4 But going fast is half the fun of it!

#5 Listen to the speed demon!

(From "Journey to the Interior" by Theordore Roethke)

#4 Remember how it was to drive in gravel
Watching for dangerous down-hill places
Where the wheels whined, going 80?

All: Wow!

#4 When you hit the deep pit at the bottom
The trick was to throw the car sideways
And charge over the hill —
Full throttle —
Grinding up and over the narrow road
Spitting and roaring —

All: Whoa!

#5 And think of all the gas you were wasting!

#2 and #4 (Tune: "Casey")

(Song should be staged — let others join in also — group should be on feet so they can move easily into "Storytelling relationship" for next poem).

Harry would drive in his automobile
With the gas full blast
He would cut on the dash a commemorative gash
For each cop he passed

His speed, it was mighty
He set it on 90
He roared down the road with a shout

He wouldn't slow down
Even when in the town
'Till his gas gave out.

#6 Fill'er up! Fill'er up!

All: Slow Down!

#3 (From "A Tract for Autos" by Arthur Guiterman)

(Last line repetitious — should be with different attitudes).

Come, all you little Runabouts
And gather round my Knee:
I'll tell you of a Touring Car
As bad as bad could be:

All: Repeat last line

#3 It worked its Klaxon overtime
To make a Horrid Noise
And thought it Fun to muss up Hens
And little Girls and Boys.

All: Repeat last line

#3 It used to blow its Tires out
To hear its Owner swear,
And loved to balk on Trolley Tracks
To give his Friends a Scare.

All: Repeat last line

#3 At last, this naughty Touring Car
Got drunk on Too Much Oil,
And went a-boiling up the Road
As hard as it could boil,

All: Repeat last line

#3 And went a-plunging, tumbling down
A dreadful, dark Ravine;
And there it burns and burns and burns
In smelly Gasoline!

All: Repeat last 2 lines twice — each time building in volume and attitude

SOUND: Either record of cars zooming by — or readers themselves make car noises.

Transition - (Schoolroom dissolves in "car noise" transition — Readers pick up stools and move to new arrangement. Readers #1 and #2 are the voices of the auto manufacturers — and so should be separated from the rest of the group. Readers 3, 4, 5 and 6 should be in a group together on levels if possible).

#6 Did you know that 90% of vacation travel is by car?

#5 Four out of five households have cars.

#3,4,5 80%???

#1 & #2 (Sing) See the USA in your Chevrolet

#3,4,5 If you can get the gas!

#3 The AAA says that 54% of all trips by private cars are less than 5 miles and 75% are less than 10 miles.

#4 One out of 7 American workers is dependent upon cars.

#5 One out of every six U.S. businesses depends upon the manufacture, distribution, service and use of cars.

#2 We back them better because we build them better.

#1 It's a little more car.

#6 Yes, for each additional 400 lbs. my car looses one more mile per gallon of gas.

#4 96 million people are licensed to drive in the U.S.

#3 90% of intercity travel is by car, truck or bus.

#1 Wouldn't you rather have a Buick?

#5 I would if they conserve gas!

#2 This is your year — make a little thunder of your own!

#6 I just wish I could make a little gas.

#1 Ford has a better idea!

#4 But what is it?

#3 Yeah! How to burn more gas without knowing you're doing it.

#6 Every year 75 million American cars travel 160 billion miles.

#5 A million trucks and buses travel 180 billion miles.

#4 That's 340 billion miles!!

All: And 34 billion gallons of gasoline!!

All: Alternate moves or together
(Sing: "Casey")

(Movement on Song Group comes together and freezes at end of song as #2 and 6 move to one side for next dialogue).

Harry would stop at the gas station pump
"Fill'er up," he cried.
Though prices were high, he had money to buy,
And he gunned her wide.

The gas fumes were swirling
And Harry was whirling
He squealed down the road on the fly,

His Cadillac drank
Almost all of a tank
While the wells ran dry.

#6** Y'know Gabe, when I was in St. Louis watchin' them hockey Blues, I kept hearin' people talk about some energy crisis.

#2 That so Walker?

#6 Yeah, and you know somethin' Gabe, they were havin' to leave their cars parked and walk because there wasn't enough gas!

#2 Don't that make the ranch look nice Walker?

#6 But Gabe, we don't use no gas here on the ranch. These horses don't use no energy.

#2 I know, Walker, it's them big city folks drivin' them fancy cars that use up all the gas.

#6 Gabe, what we oughta do is go to Saint Louis and open a livery stable.

(Silence — look at each other).

#2 Ya think so Walker? Then St. Louis will have a grass shortage.

#6 (Disheartened) Yeah, oh. . . Well, I guess maybe you're right, Gabe.

#2 You know Walker, I don't mind starvin' and I really don't mind freezin', but I'd sure hate to have to walk to the cemetary.

All: (Intermix voices — move to positions for next sequence).

Fair gasoline, we weep to see
You waste away so soon
You vaporize, and vanish
Ere' the rising of the moon

Full forty fathoms black and deep
Your petrol father lies —
In foreighn lands or mountains steep
A most expensive prize

The cars all lined up at the pumps
Are quite a common scene
So here's a list of "do's" and "don'ts"
For saving gasoline.

(During poem readers move stools if necessary for next section. In groups of two: #1 & 3 - 2 females; #2 and 6 - 2 males; #4 & 5 - male-female).

#1 Smoother starts and stops

#3 Don't gun the engine

#1 Drive with steady acceleration.

— — — — —

#6 SUNOCO — We can be very friendly!

Hi (very friendly) may I help you? Wash your windows? Check your oil? Fill your tires?

#2 (Interrupting) Hey Mack, I'm in a hurry!

#6 Check your radiator, Sir: Clean your filter? Add water to your battery? We've got a free car wash in the back, sir.

#2 Listen Mack! All I came here for is gas!

#6 Didn't you see the sign, Sir? We've run out of gas! (as he drives away) By the way, there's a free vacuum with the car wash!

— — — — —

#3 Use the air conditioner sparingly.

#1 Turn off engines on stopped vehicles.

#3 Keep your speed down.

— — — — —

#5 You expect more from STANDARD
If you can get it!
Hi! May I help you Sir? (Very sexy)

#1 Wow! (staring at her) Oh — yes! Uh, fill'er up!

#5 Oh, I'm sorry Sir, but due to the gas shortage we can only give you a half a gallon.

#4 (Staring at her) Oh, that's all right.

#5 That will be 42 cents, Sir.

#4 42? (Absent mindedly, with a sign) 42. (Sigh)

#5 Sir!!!

#4 Oh! I'm sorry, here.

#5 Thank you, Sir. (Turns away)

#4 42 cents. 42 cents for half a gallon!!! That's outrageous!!!

— — — — —

#1 Telephone calls could replace trips

#3 Don't drive short distances, take a bus, walk, or ride a bike.

#1 Trips should be combined. Form a car pool.

— — — — —

#6 Off on a Holiday we will go (Sung to "Glory and Love to
We'll fill the tank up with Texaco the Men of Old" — Forest

#2 Hey, why don't you turn the light's on in the filling station?

#6 ShHHHH! I'm afraid the lights will attract a crowd.
We just got in some gas.

#2 Well, don't you want to sell it?

#6 Yeah, but yesterday we got 1,000 gallons at 4 pm and it was gone by 5:30. What a mob!

#2 Well, where did they all come from?

#6 Cars followed the tank truck in here like flies following a mule. When the tanker left the station a car stopped it and asked where it was making the next delivery.

— — — — —

#3 Motors should be tuned up every 10,000 miles.

#1 Tire pressure needs to be checked daily

#3 Use the brake to hold the car, rather than the accelerator.

— — — — —

#5 Put a tiger in your tank.

#4 I don't need a tiger in my tank, I need some gas!

#5 Get to know Gulf and you'll get to know your car.

— — — — —

#6 Dad, please let me have the car!

#2 Listen, son, all I know is that with today's gas shortage and prices I can't afford to have you running all over town. The last time I rode with you, you had the radio blasting my ears out and the air conditioner on while it was only 70 degrees outside. And how about the time you made that jerk-stop and then squealed off again leaving a 10-foot trail behind us. And just because Susie Jones was on the sidewalk?

#6 Look, Dad, I'm paying for the gas!

#2 That's what's wrong with today's society — they don't realize something until it's too late.

#3 Well, is it too late??

#5 Will there never come a time
When the motor car declines
When we can smell the summer blooms
Free from stench of motor fumes?

All: (Intermixed voices — group moves together - Center on these lines)

Must we always be commuting
Never resting always moving
Here and there
And back again
Like celestial comets shooting?
And polluting, and polluting???

Any one or more of the following may be used as the finale production number.

All: (Tune-Casey)

Harry will drive at a low 55
When the gas runs out
He'll turn off the cool and will follow the rule
When the gas runs out

His head may be shaking
His foot may be quaking
His cries may be heard all about

But although he may roar
He'll be racing no more
When the gas runs out.

All (Tune-My Merry Oldsmobile)

There's a crisis on, Lucille
Let's conserve the Oldsmobile
We will do our riding on —
Public trans - por - ta - she - un

If you drive alone — you're wrong
So we'll take someone along
We'll have a load
When we hit the road
Come and join our highway song.

All: (Tune-America, The Beautiful)

The Beautiful for spacious skies
And amber fields of grain
May well be seen and keep more clean
If we all take the train

America, America
We'll save thy energy
Thy wheels must turn
Thy oil must burn
But with economy.

All: (Tune-God Save America)

We'll help America
Land that is ours
keep our co / ol
Save her fuel
Take some hikes, ride our bikes, park our cars.

From the mountains, to the valleys
We will go less frequently
We pledge, America
Con - ser - van - cy.